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ABSTRACT

An advanced General Education Program has been designed to prepare an individual with the information, and general knowledge required to successfully pass the American Council on Education's High School General Education Development (GED) Test. The Advanced General Education Program provides comprehensive self-instruction in each of the following areas: (1) Correctness and effectiveness of Expression, (2) Social Studies, (3) Natural Sciences, (4) Interpretation of Literary Materials, and (5) General Mathematics. This document is a teacher's manual. (CK)

PM 431-TM

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ADVANCED GENERAL EDUCATION PROGRAM

A HIGH SCHOOL SELF-STUDY PROGRAM

TEACHER'S MANUAL

AC 01140 29

U.S. DEPARTMENT OF LABOR
MANPOWER ADMINISTRATION, JOB CORPS
NOVEMBER 1969

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INTRODUCTION

The Advanced General Education Program has been designed to prepare an individual with the information, concepts, and general knowledge required to successfully pass the American Council on Education's High School General Education Development (GED) Test. The Advanced General Education Program provides comprehensive self-instruction in each of the following areas:

1. Correctness and effectiveness of Expression
2. Social Studies
3. Natural Sciences
4. Interpretation of Literary Materials
5. General Mathematics

Results from two years of use indicate that the Mathematics lessons of the Advanced General Education Program are only minimally effective. It is therefore recommended that the program be supplemented with additional self-instructional mathematics lessons. The following is a suggested list of materials that can be used to more effectively prepare the student in the area of mathematics:

ITEM	SUPPLIER	PRICE
Understanding Algebra-SA12	McGraw-Hill Book Company (Webster Division) Manchester Road Manchester, Missouri 63011	$1.20
Using Algebra-SA13	McGraw-Hill Book Company	$1.20
Using Geometry-SA14	McGraw-Hill Book Company	$1.20
Using Trigonometry-SA15	McGraw-Hill Book Company	$1.20
Fractions III by Hauck, Moore & Smith	McGraw-Hill Book Company	$1.47
Experiences in Mathematical Discovery 1: Formulas, Graphs, and Patterns (NCB)	NCTM 1201 16th Street, N. W. Washington, D. C.	$ .50
Experiences in Mathematical Discovery 3: Mathematical Sentences (NCB)	NCTM	$ .50

NCB: Non-Consumable Book

ITEM	SUPPLIER	PRICE
Experiences in Mathematical Discovery 4: Geometry (NCB)	NCTM 1201 16th Street, N. W. Washington, D. C.	$ .50
Answer Book	NCTM	$1.00
Cyclo-Teacher: Squaring a Number	Field Education Publications, Inc. 609 Mission Street San Francisco, California 94105	$ .50
Cyclo-Teacher: Literal Numbers and Symbols	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Kinds of Expressions	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Signed Numbers	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Adding Signed Numbers	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Adding Monomials	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Subtracting Signed Numbers	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Subtracting Monomials	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Multiplying Signed Numbers	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Multiplying Monomials	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Dividing Signed Numbers	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Dividing Monomials	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Symplifying Expressions	Field Education Publications, Inc.	$ .50

ITEM	SUPPLIER	PRICE
Cyclo-Teacher: Adding Polynomials	Field Education Publications, Inc. 609 Mission Street San Francisco, California 94105	$ .50
Cyclo-Teacher: Subtracting Polynomials	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Ratio	Field Education Publications, Inc.	$ .50
Cyclo-Teacher: Proportion	Field Education Publications, Inc.	$ .50
Cyclo-Teacher Machine	Field Education Publications, Inc.	$12.95
Answer pads (set of 2)	Field Education Publications, Inc.	$2.49

It must be stressed that the Advanced General Education Program is extremely comprehensive and will meet the learning needs of the vast majority of students who qualify for this program (i.e., those who have a 6th grade mathematics ability and a 6th grade reading ability). Without additional mathematics lesson materials, this program will prove to be highly effective. However, with the inclusion of supplementary mathematics lesson materials, such as those listed above, the Advanced General Education Program becomes the most effective GED preparatory program available.

The program has been designed to require as little routine teacher attention as possible. Instructions for placement of materials are included in this manual along with detailed administrative directions. Once students have become familiar with this placement and with the procedures for taking the lessons and grading their own Mastery Tests, the assistance of the instructor should be required only when students encounter difficulties they cannot themselves resolve and when progress is to be recorded.

All students who enter with or subsequently attain at least sixth grade reading and mathematics skills as demonstrated on the Advanced Stanford Achievement Test, should be encouraged to enter and complete this program and to take the Tests of General Educational Development. In view of the vital importance of the GED in placement and occupational mobility, teachers and counselors should spend as much time as possible in encouraging eligible students to complete both program and test. It is essential that the classroom teacher become completely familiar with the instructions and procedures outlined in this manual.

SECTION I

Field Test Results:

The Advanced General Education Program was field-tested at six Job Corps Centers and the following was demonstrated:

1. Of the students averaging 6.0 or better on the Stanford Achievement Test (SAT), 94.6% achieved the minimum passing scores on the GED Test recommended by the American Council on Education (a score of at least 35 on each GED sub-test or an average of 45 on all tests).
2. Time required to complete all of the lesson materials is as follows:
   a. Range: 90 to 230 hours
   b. Average: 145 hours
3. The program materials are sufficiently self-instructional so as to require only minimal monitoring by the teacher.
4. The most effective program administration schedule is to have the student spend three (3) hours per day working through the GED Program materials.

A detailed description of the Advanced General Education Program is found in Section V of this manual.

Entry Requirements:

The results of the field test of this program clearly indicate that students with average scores on the Advanced Battery of the Stanford Achievement Test of less than 6.0 do not profit from the program. Conversely, those students averaging 6.0 or better on the Advanced

Battery of the Stanford Achievement Test stand an excellent chance of passing the GED Test at the level recommended by the American Council on Education. Therefore, the following procedures are to be followed in identifying and selecting students to participate in the Advanced General Education Program. To be eligible to participate the student must:

1. Have satisfactorily completed the Job Corps Basic Education Program or its equivalent.
2. Express his desire and willingness to participate in, and to complete, the Advanced General Education Program.
3. Achieve an average reading score of 6.0 and an average mathematics score of 6.0 as measured on the Advanced Battery of the Stanford Achievement Tests (Grades 7-9). The SAT is to be administered at the Center as a pre-program screening device. Therefore, Center staff personnel must be familiar with the administration and scoring procedures for this test.

Administering and Scoring the SAT, Advanced Battery

General instructions for administering the Advanced Battery of the Stanford Achievement Test are provided in the Test Administrator's Manual, Supplement 1, PM 400-5 (S1), pages S-66 through S-76 for SAT subtests 1, 4, 5, and 6. The same format should be followed for administering all subtests used for measuring entry level for this program. The following schedule of tests and times should be adhered to. Test Booklets and Answer Sheets are listed on T/A 7-2, line items 1522-1526. A hand-scoring stencil is available. Difficulties encountered in procuring any of these materials should be reported to Program Research and Evaluation Branch, Job Corps Headquarters, Washington, D. C.

SCHEDULE FOR ADVANCED SAT SUBTESTS

FIRST SITTING			
Distributing testing materials, reading directions, allowing rest period, etc.		approx.	8 min.
Test 1: Paragraph Meaning			30 min.
Test 2: Spelling			15 min.
	Total:	approx.	53 min.
SECOND SITTING			
Distributing testing materials, reading directions, allowing rest period, etc.		approx.	6 min.
Test 3: Language			
Part A: Usage			10 min.
Part B: Punctuation			7 min.
Part C: Capitalization			7 min.
Part D: Dictionary Skills			15 min.
Part E: Sentence Sense			7 min.
	Total:	approx.	52 min.
THIRD SITTING			
Distributing materials, etc.		approx.	3 min.
Test 4: Arithmetic Computation			32 min.
	Total:	approx.	35 min.
FOURTH SITTING			
Distributing materials, etc.		approx.	6 min.
Test 5: Arithmetic Concepts			25 min.
Test 6: Arithmetic Applications			30 min.
	Total:	approx.	61 min.
FIFTH SITTING			
Distributing materials, etc.		approx.	6 min.
Test 7: Social Studies			
Part A: Content			25 min.
Part B: Study Skills			27 min.
	Total:	approx.	58 min.
SIXTH SITTING			
Distributing materials, etc.		approx.	3 min.
Test 8: Science			25 min.
	Total:	approx.	28 min.

A student's reading level and mathematics level are determined by averaging his grade scores on the following Advanced SAT subtests:

Reading	Mathematics
Test 1: Paragraph Meaning	
Test 2: Spelling	Test 4: Arithmetic Computation
Test 3: Language	Test 5: Arithmetic Concepts
Test 7: Social Studies	Test 6: Arithmetic Applications
Test 8: Science	

EXAMPLE: Suppose a student had the following scores on the subtests identified above.

Test 1:	Paragraph Meaning	68			
Test 2:	Spelling	56	Test 4:	Arithmetic Computation	5.8*
Test 3:	Language	63	Test 5:	Arithmetic Concepts	6.5
Test 7:	Social Studies	78	Test 6:	Arithmetic Applications	5.8
Test 8:	Science	65			18.1
		330			

Average Reading Level = $\frac{330}{5}$ = 6.6* Average Mathematics Level = $\frac{18.1}{3}$ = 6.033

*The grade equivalent score is obtained by placing a decimal at the left of the last digit, i.e., 58=5.8 grade equivalent.

Given the scores of the student used in the example, it is clear that this student is qualified for admission to the Advanced General Education Program. It is possible for a highly motivated student with an average reading score of 6.0 or better and an average mathematics level between 5.5 and 6.0 to gain enough from the program to pass the GED Test at the level recommended by the American Council on Education (at least 35 on each subtest or an average of 45 on all subtests).

Meeting the levels specified above, and conscientious completion of the program, will enable most students (approximately 90%) to meet the certification standard recommended by the American Council on Education. To increase the likelihood that students will meet the higher certification requirements of many states (e.g., at least 35 on each GED sub-test and an average of 45 on all GED sub-tests) an average reading score of 7.0 or better and an average mathematics score of 6.5 or better is recommended. While it is highly desireable that each student receive a high school equivalency diploma from his home state, it must be remembered that many states have age requirements of 19, 20, and 21 years; very high passing score levels for the sub-tests of the GED; and other requirements that make it difficult for all students to receive a home state high school equivalency diploma. Therefore, Center staff personnel should keep in mind the fact that the Armed Forces, Civil Service, and some employers accept the passing scores recommended by the American Council on Education in lieu of a GED certificate. That is, a person need not be issued the high school equivalency diploma by a state to be acceptable to many potential employers--satisfactory scores on the GED meet their definition of "a high school graduate or equivalent."

Therefore, the objective of the instructor and Center staff should be to get us many qualified students as possible prepared and tested, regardless of whether they are eligible to be certified in a given state. Certification, of course, where possible, is highly desirable, but many states will test students they cannot immediately certify, and the test scores themselves are valuable.

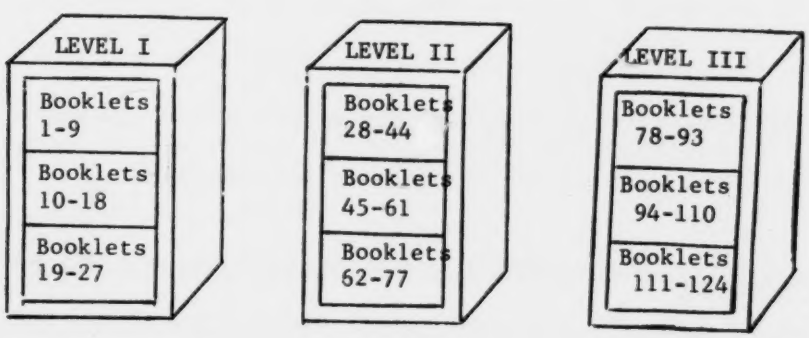
SECTION II

Administering Program Materials:

The Advanced General Education Program consists of three major levels, each of which is sub-divided into units; the units are then sub-divided into individual lessons. There are a total of 124 individual lesson booklets in the entire program. The number of lessons in each level is as follows:

Level I (Booklets 1 through 27)	27
Level II (Booklets 28 through 77)	50
Level IV (Booklets 78 through 124)	47
Total	124

One consideration for the administration of the materials is their proper storage. The materials should be stored so as to assure easy access to each individual lesson by the students and responsible teachers. A suggested method for storing the Advanced General Education Program materials is shown below:



Standard Filing Cabinets:

1. Each cabinet clearly marked as to Level.
2. Each drawer of each cabinet clearly marked as to the lesson booklets contained.

Screening Tests:

There are 24 screening tests in the program, corresponding to the 24 lesson units. The purpose of the screening test is to allow the by-passing of individual lessons that teach materials the corpsmember already knows. A score of 80% or better on a given screening test is required to by-pass the individual lessons covered by the screening test. The screening tests and their related individual lessons are as follows:

Level I

Screening Test I-1 Booklets 1 thru 2	Screening Test I-5 Booklets 14 thru 16
Screening Test I-2 Booklets 3 thru 7	Screening Test I-6 Booklets 17 thru 21
Screening Test I-3 Booklets 8 thru 10	Screening Test I-7 Booklets 22 thru 24
Screening Test I-4 Booklets 11 thru 13	Screening Test I-8 Booklets 25 thru 27

Level II

Screening Test II-1 Booklets 28 thru 29	Screening Test II-6 Booklets 48 thru 51
Screening Test II-2 Booklets 30 thru 35	Screening Test II-7 Booklets 52 thru 56
Screening Test II-3 Booklets 36 thru 38	Screening Test II-8 Booklets 57 thru 60
Screening Test II-4 Booklets 39 thru 42	Screening Test II-9 Booklets 61 thru 72
Screening Test II-5 Booklets 43 thru 47	Screening Test II-10 Booklets 73 thru 77

LEVEL III

Screening Test III-1
Booklets 78 thru 80

Screening Test III-2
Booklets 81 thru 83

Screening Test III-3
Booklets 84 thru 93

Screening Test III-4
Booklets 94 thru 108

Screening Test III-5
Booklets 109 thru 119

Screening Test III-6
Booklets 120 thru 124

Remember, when a student scores less than 80% on a screening test he must complete each of the individual lessons related to the screening test. A score of 80% or better allows the corpsmember to by-pass. Each score should be recorded on the Student Progress/ Performance Record.

Individual Lesson Materials:

The individual lessons in the Advanced General Education Program are self-instructional and are to be completed at the student's own rate. When the student has shown that he is not familiar with the material covered by a group of individual lessons (by scoring less than 80% on the screening test) he will complete the individual lesson materials. At the end of each booklet is a mastery test that covers the material presented in the lesson. When the student completes the lesson materials he must then take the mastery test. The answer keys for all mastery tests in the program are printed in the Students' Answer Keys booklet, which should be placed in the classroom so that students can grade their own mastery tests before bringing them to the instructor for review and evaluation.

The sequence of lessons in the program begins with the Student's Handbook, PM 431-SH; and the lessons and accompanying mastery tests are to be administered according to the list on pages 23-26 of this Manual.

The following procedures are to be used in interpreting mastery test scores:

1. Check and evaluate each student's corrected mastery test as soon as he brings you the test. Enter the percentage score in the appropriate numbered "lesson block" of that student's Progress/Performance Record.
2. When the student scores 85% or better have him, "on his own," find the correct answers to the questions he missed. Then have him proceed to the next lesson.
3. When the student scores between 60% and 85%, work with the student and help him correct his test to 100%. Discuss all difficult points and concepts to help clarify the material. Then have him proceed to the next lesson.
4. When the student scores less than 60%, have him repeat the lesson material. After the student completes the lesson material a second time, administer the mastery test again. If the student still makes less than 60%, follow the same procedures outlined in step #3 above. That is, after counseling and correcting the test to 100%, allow the student to proceed to the next lesson.

Unit Tests:

There are 24 unit tests in the Advanced General Education Program. These tests are to be administered when the student completes the set of individual lessons that relates to each unit test; also, when a student scores 80% or better on the screening test and by-passes the individual lessons, he then is given the appropriate unit test. These tests provide the student with the opportunity to apply the skills and knowledges

covered in the related individual lesson materials and screening tests. The procedure to be followed in administering and scoring the unit test is:

1. Instruct the student to take the unit test and to write his answers on an appropriately headed and numbered sheet of notebook paper. Have him bring you his completed test.
2. Use the appropriate answer key in the Teacher's Answer Keys booklet to score the test.
3. Regardless of the student's score, help him correct his test and let him proceed to the next program component (i.e. the next screening test).

Writing of Responses and Answers

The Advanced General Education Program was designed to have each student write all of his responses and answers on the lesson material and test booklets; that is, the materials were designed to be "consumable". Each student was to be issued a complete set of the program materials. However, since there is a limited distribution of this edition of the program (between 12 to 24 sets per Center) it is essential that the students do not write their responses on the lesson booklets, mastery tests, or screening tests. All responses and answers to questions will be written on separate sheets of lined notebook paper. READ pages 9 through 16 of the Student Manual for procedures as to how separate sheets of paper are to be used. Past studies have shown that writing responses and answers on separate sheets of paper, rather than in the programmed tests, does not adversely affect the learning outcomes. By having students write their responses on separate sheets of paper the material can be used by more than one student.

Therefore, it is anticipated that the initial distribution of the program materials will be sufficient to meet the student load requirements at each Center.

Summary of Administration

The key points to observe in the administration of the Advanced General Education Program are as follows:

1. Store materials for convenient access. Keep Teacher's Answer Keys secure.
2. Administer screening tests
   a. Screening tests are to be administered sequentially; that is, before the student completes a set of individual lesson materials the screening test that relates to those lessons is administered.
   b. Students who score 80% or better on a screening test are allowed to by-pass the lessons that relate to the screening test.
3. Administer the individual lesson materials and mastery tests
   a. Have students write all responses and answers on separate sheets of lined notebook paper with appropriate headings and numbers.
   b. Have the student complete the mastery test immediately afeter he completes the lesson, score it, and bring it to you.
      (1) With a mastery test score of 85% or better, the student is instructed to correct his paper to 100%, then he is directed to proceed to the next lesson.
      (2) With a mastery test score between 60% and 85%, help the student correct his test to 100%, discuss and clarify difficult areas. Then, direct the student to proceed to the next lessons.

(3) With a mastery test score of less than 60%, direct the student to repeat the lesson. After the student has completed the lesson the second time, readminister the mastery test. If the student still scores less than 60%, help him correct his test to 100%, discuss and clarify difficult areas. Then direct the student to proceed to the next lesson.

(4) Immediately after examining a lesson mastery test, enter the score in appropriate "Lesson Block" of the Student Progress/Performance Record.

4. Administer the unit test for the appropriate segment of instruction

a. Unit Tests are to be administered either after a student completes a Screening Test for a unit of instruction with a score of 80% or better, or after he makes satisfactory progress through the lessons and mastery tests that make up that unit.

b. Regardless of his score on the Unit Test, the student is to be assisted in correcting his wrong answers and in understanding why the correct answers are preferred. He is then to be directed to the Screening Test for the next unit in the program.

c. Although no space is provided, the student's Unit Test score is to be entered on the Student Progress/Performance Record just above and to the right of the diamond which designates that Unit Test (see chart on pages 27-28 of this Manual).

SECTION III

Recording Student Progress

The Advanced General Education Program has been designed to be as self-instructional as possible. The teacher, however, plays a vital and dynamic role that allows each student to gain enough from the program to be prepared for the GED Test. A one-page progress document has been developed to help the teacher treat each student as an individual. This document is the Student Progress/Performance Record. It consists of a progress flow chart for each of the three levels in the program. All of the student's performance is to be recorded on this document. Each time a student takes a test (a screening test, mastery test, or unit test) the percentage score is entered on the record. This document has unique design characteristics that show where the student presently is in the program, where he has yet to go, where he has been, and what his performance level on each test has been.

A progress flow chart is maintained for each student. Entries to be made on this document are:

1. student's name
2. date started
3. date completed
4. SAT reading level (average)
5. SAT mathematics level (average)
6. Screening test percentage scores
7. mastery test percentage scores
8. dates GED tests were taken by the student
9. GED test scores made by the student

Completing the Student Progress/Performance Record

As soon as a student completes a test, the percentage score is entered in the appropriate block of that student's personal record. Then the student's test is corrected to 100% by the processes outlined in Section II of this manual. If a student makes less than 60% on a mastery test, that score is entered in the appropriate block of the progress record, and the student repeats the lesson. Section II of this manual describes the procedures to be followed with scores of less than 60%. When a student scores 80% or better on a screening test, an "X" is drawn in the individual lesson blocks that are by-passed because of the demonstrated prior knowledge. An example of some entries on a progress flow chart is shown on the next page.

After an inspection of this chart it is clear that the student in question:

1. Is presently working on lesson number 19, since he has completed lessons 1 through 18 as indicated by scores and "Xs".
2. He knew enough about lessons 3 through 7, and lessons 14 through 16, to by-pass them.
3. Has nine lessons to take before he completes level I of the program.
4. Has never had to repeat any lesson since none of his mastery test scores are less than 60%.

All entries on the Student Progress/Performance Record for each student are to be made by the teacher. The information contained on the record must be made available to the student concerned, since it graphically displays his progress and performance.

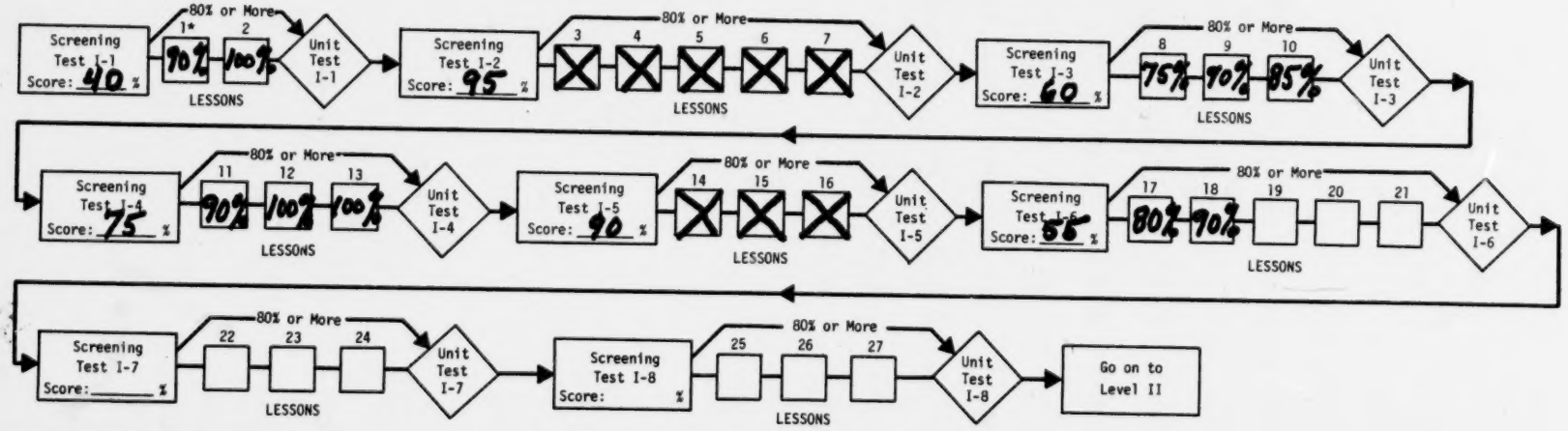
ADVANCED GENERAL EDUCATION PROGRAM

STUDENT PROGRESS/PERFORMANCE RECORD

NAME: Pitts, Wilba D. DATE STARTED: 17 Nov 1969 DATE COMPLETED: _____

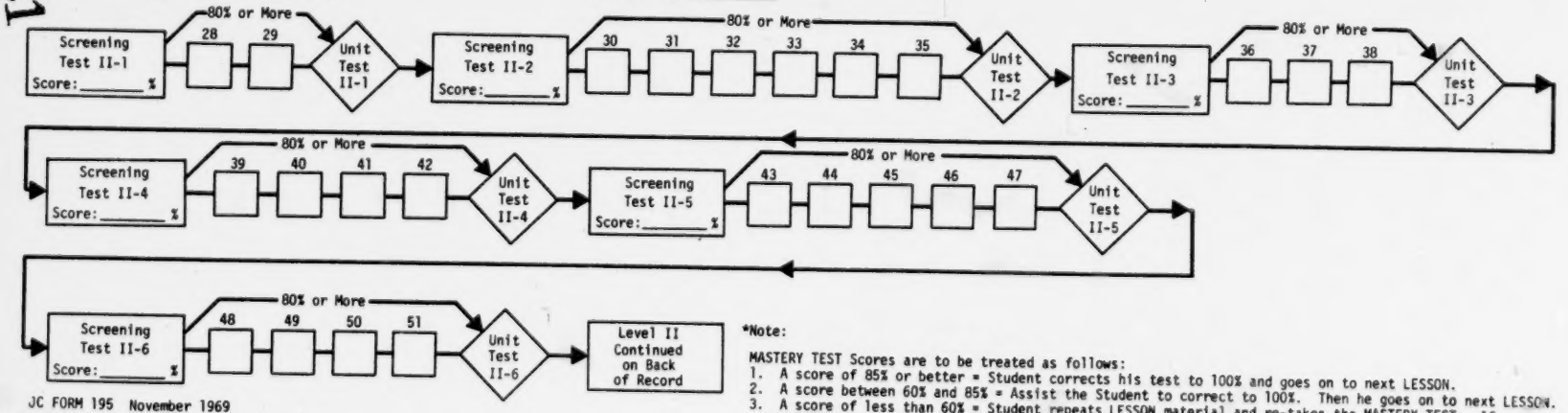
Stanford Achievement Test (Advanced Battery - Grades 7-9): READING 6.8 MATHEMATICS: 7.2

PROGRESS FLOW CHART LEVEL I



PROGRESS FLOW CHART LEVEL II

DATE STARTED: _____


Screening Test II-1 Score: _____ %
80% or More
28 29
Unit Test II-1
Screening Test II-2 Score: _____ %
80% or More
30 31 32 33 34 35
Unit Test II-2
Screening Test II-3 Score: _____ %
80% or More
36 37 38
Unit Test II-3
Screening Test II-4 Score: _____ %
80% or More
39 40 41 42
Unit Test II-4
Screening Test II-5 Score: _____ %
80% or More
43 44 45 46 47
Unit Test II-5
Screening Test II-6 Score: _____ %
80% or More
48 49 50 51
Unit Test II-6
Level II Continued on Back of Record

*Note:

MASTERY TEST Scores are to be treated as follows:
1. A score of 85% or better = Student corrects his test to 100% and goes on to next LESSON.
2. A score between 60% and 85% = Assist the Student to correct to 100%. Then he goes on to next LESSON.
3. A score of less than 60% = Student repeats LESSON material and re-takes the MASTERY TEST. If Student scores less than 60% on the MASTERY TEST the second time, help him correct his test to 100%. He then goes on to the next LESSON.

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SECTION IV

Scheduling Students for the GED Test:

Students will be scheduled for the GED Test by the same procedures currently in effect. Section 431 of the Conservation Centers administrative Manual (CCAM) outlines the scheduling procedures in detail. All paragraphs of this section apply except paragraph 431.1 - Requirements. The student must complete the Advanced General Education Program before applying for the GED examination, instead of the materials outlined in paragraph 431.1. Complete review of Section 431 of the CCAM by appropriate staff members is recommended. Staff personnel responsible for the GED program and the new Advanced General Education Program should become familiar with the scheduling procedures and information contained in Section 431 of the CCAM.

SECTION V

The Advanced General Education Curriculum

The following is an explanation and a description of the broad principles underlying the development of the curriculum and a description of each of its components. The curriculum has been designed to provide the student with an educational background equivalent to that obtained in the typical high-school course of studies on which standard high school achievement tests are based.

Emphasis in training is on learning basic concepts, rather than on the test-taking skills which are taught incidentally. Included are components in English usage, science, social studies, mathematics, and literature. The program prepares the student by improving his reading ability, increasing his vocabulary, giving him experience at interpretive tasks and making him broadly familiar with the subject matter areas covered by the curriculum. Complete mastery of subject matter areas is not required.

A. The Design Strategy

This curriculum is developed with the understanding that a student may quickly lose interest in the program if it is not important and interesting to him. Many students entering the program may have only a remote idea of the value of the certificate of high school equivalency. To maintain his motivation, the curriculum is designed to give the student short-range "proof" that he is learning material that is important to him and that he is acquiring "power" to do things that he could not do before. Consequently, the primary principle governing the design of this curriculum has been to allow

the student to make gains that are meaningful to him immediately and at the same time enable him to clearly see his progress towards the long-range goal of obtaining the GED certificate. The next most important design consideration is that the curriculum must be flexible enough to meet administrative constraints. Flexible administration has been accomplished in two primary ways: (1) lesson units do not take more than an hour to complete; (2) periodic screening tests enable the student to by-pass material he may already know or to repeat materials that he did not learn sufficiently well.

B. Curriculum Components

The basic design of the curriculum is shown on pages 27-28. The student receives an orientation to the program. Next, he takes the Advanced Stanford Achievement Test. Then, based on the diagnosis of test results, he receives the appropriate parts of the training curriculum. The curriculum is divided into major learning sections, called units, which are administered sequentially.

1. The Unit

The unit is the primary instructional component, consisting of a multi-part screening test, several individual lessons, mastery tests and unit tests, which are effectively application exercises.

a. Screening Test

Screening tests are made up of items which test the main concept or skill to be taught in the lessons. Performance on the screening test indicates whether the student can by-pass any or all of the lessons in the unit.

b. The Lesson

This unit component consists of a lesson and a mastery test. Each lesson is designed to be mastered in one sitting from 30 to 60 minutes in length. Much of the specific content of these lessons is presented for the purpose of exposing the student to words and facts that will help increase his repertoire of general information.

Many of the science and social science lessons function as reading comprehension exercises using curricular subject matter for content. The primary purpose of these lesson units is to teach one or two major concepts and a few related words and facts. Mathematics and English usage lessons develop specific skills. In the language components of the program, total mastery of the English usage units is required, since this is the most frequent point of failure on the high-school equivalency examinations. Literature units contain excerpts from literary works, although it is not intended that students become experts in literary criticism. The objective of the literature lessons is to have the student

gain familiarity with literary forms and be able to interpret them at the minimum level required by the GED tests.

When the student completes a lesson, he is instructed to take a Mastery Test. Every lesson has a Mastery Test to measure mastery of specific facts, words, or skills; understanding of the central concept; and, in some cases, the ability to apply concepts to a new context. The Mastery Test is at the end of each lesson booklet.

c. Unit Tests

The final unit application exercise serves: (1) to reward the students by demonstrating to them that because they have mastered a segment of knowledge, they can now perform a specific task, and (2) to further develop essential cognitive skills.

To accomplish these two goals, there is one type of exercise which follows each unit and which will be required after each sequence of lessons. This type of exercise is the unit test.

The unit test develops and tests cognitive skills and the ability to handle connotative meanings of the vocabulary words learned in the lesson units. These exercises use formats comparable to those on achievement tests. A by-product of these exercises is a working

familiarity with various test formats and types of questions. As each new test format (or type of question) is introduced, directions are given on how to do the exercise.

The Student Progress/Performance Record, shown on pages 27-28, following, provides a summary of what is included in the Advanced General Education Program; it also shows the relationship between Screening Tests, Lesson Materials, and the Unit Tests.

SECTION VI

COMPLETE LISTING OF ALL PROGRAM MATERIALS

A. TEACHER'S ADMINISTRATIVE MATERIALS

Teacher's Manual	PM 431-TM
Teacher's Answer Key	PM 431-TAK
Progress Flow Chart	JC Forms 195, 195a, 195b

B. STUDENTS' INTRODUCTORY AND SELF-ADMINISTERED TEST MATERIALS

Student's Handbook	PM 431-SH
Screening Tests	PM 431-ST
Unit Tests	PM 431-UT
Students' Answer Keys	PM 431-SAK

C. SEQUENCE OF LESSONS IN ADVANCED GENERAL EDUCATION PROGRAM

LEVEL I

	Unit 1	Lesson Booklets PM 431-
1	Word Roots, Prefixes, Suffixes	1
2	Word Context Clues	2
	Unit 2	
1	Map Reading Skills	3
2	Climate	4
3	Studying Man and the Natural World	5
4	Man and His Culture	6
5	Reading for Implied Meanings	7
	Unit 3	
1	Production and Consumption	8
2	Forms of Government	9
3	Reading for Facts, Opinions and Issues	10
	Unit 4	
1	Basic Economic Systems	11
2	Representative Democrary and Political Parties	12
3	Reading To Draw Inferences	13
	Unit 5	
1	Craftsmanship and Technology	14
2	Government Separation of Powers	15
3	Comparisons in Literature	16
	Unit 6	
1	Positive and Negative Numbers	17
2	States of Matter: Solid, Liquid, Gas	18
3	Properties and Measures of Matter	19
4	Energy, Matter, Theory and Law	20
5	The Particles and Structure of Matter	21
	Unit 7	
1	Atomic Structure and Chemical Change	22
2	Chemical Compounds	23
3	Forms of Energy	24

LEVEL I (cont'd)

	Unit 8	Lesson Booklets PM 431-
1	Solving Fraction Word Problems	25
2	Solving Decimal Word Problems	26
3	Solving Percentage Word Problems	27

LEVEL II

	Unit 1	
1	Tables and Graphs	28
2	Line Graphs	29

	Unit 2	
1	U.S. Colonization to Independence	30
2	U.S. Confederation to Constitutional Convention	31
3	Framing the U.S. Constitution	32
4	Founding Fathers	33
5	The Election Process	34
6	The Civil War	35

	Unit 3	
1	Industrialization and Growth of the Cities	36
2	Immigration	37
3	Unions and Management	38

	Unit 4	
1	Reading for Feelings	39
2	Reading for Shifts in Feeling	40
3	Reading for Character	41
4	Reading for Signs of Hidden Character	42

	Unit 5	
1	Words That Paint Pictures	43
2	Devices Used in Literature	44
3	The Meaning of Literary Devices	45
4	Periods and Levels of Writing	46
5	Qualities of Good and Bad Writing	47

	Unit 6	
1	What to Look for in Narrative Writing	48
2	Interpreting Figurative Writing	49
3	Keeping Track of the Subject in Writing	50
4	Reading Literature for Understanding	51

LEVEL II (cont'd)

		Lesson Booklets PM 431-
	Unit 7	
1	Life Functions and Cells	52
2	Cell Structure	53
3	Tissues, Organs, Systems	54
4	Growth and Nutrition	55
5	Metabolism	56
	Unit 8	
1	Algebra	57
2	Powers and Roots	58
3	Geometry	59
4	Number Series	60
	Unit 9	
1	Speed, Acceleration, and Velocity	61
2	Force, Mass, and Distance	62
3	Types of Motion and Rest	63
4	Electricity and Magnetism	64
5	Electrical, Magnetic, and Gravitational Fields	65
6	The Conservation and Conversion of Energy	66
7	Simple Machines and Work	67
8	Gas Laws	68
9	Principles of Heat Engines	69
10	Sound and Sound Waves	70
11	Light Waves and Particles	71
12	The Behavior of Light Rays	72
	Unit 10	
1	Atomic Structure and Valence	73
2	Chemical Bonding	74
3	The Table of Elements	75
4	Electrolysis	76
5	Osmosis	77

LEVEL III

	Unit 1	
1	Free Enterprise and Government Regulation	78
2	Social Legislation	79
3	Taxes	80
	Unit 2	
1	Free Trade and Tariffs	81
2	Capitalism, Communism, Socialism	82
3	Nationalism vs. Internationalism	83

LEVEL III (cont'd)

	Unit 3	Lesson Booklets PM 431-
1	Plants and Photosynthesis	84
2	The Human Digestive System	85
3	Functions of the Blood	86
4	Human Circulation and Respiration	87
5	Reproduction of a Single Cell	88
6	Reproduction by Male and Female Cells	89
7	The Human Reproductive System	90
8	Genetics and Heredity	91
9	The Nervous System	92
10	The Glandular System	93
	Unit 4	
1	Difficult Words to Spell	94
2	Sentences and Their Parts	95
3	Adjectives and Adverbs	96
4	Comparative Forms	97
5	Spelling ie and ei Words	98
6	Using Negatives Correctly	99
7	Using Prepositions and Prepositional Phrases	100
8	Spelling - ance and ence Words	101
9	Subject and Object Pronouns	102
10	Possessive and Reflexive Pronouns	103
11	Possessive and Plural Nouns	104
12	Spelling Confusing Word Pairs	105
13	Subject and Verb Agreement	106
14	Past Verb Forms	107
15	Spelling More Difficult Words	108
	Unit 5	
1	Spelling Endings Added to E	109
2	Capitalization	110
3	Question Marks and Exclamation Points	111
4	Quotation Marks	112
5	Spelling Double Letter Demons	113
6	Colons and Dashes	114
7	Punctuating Series with Commas and Semicolons	115
8	More Confusing Word Pairs	116
9	Separating Sentence Parts with Punctuation	117
10	Other Uses for Commas and Semicolons	118
11	More Special Spelling Problems	119
	Unit 6	
1	Spelling More Endings	120
2	Matching Sentence Parts	121
3	Using the Right Sentence Connectives	122
4	More Ways to Make Sentences Effective	123
5	Last of the Confusing Word Pairs	124

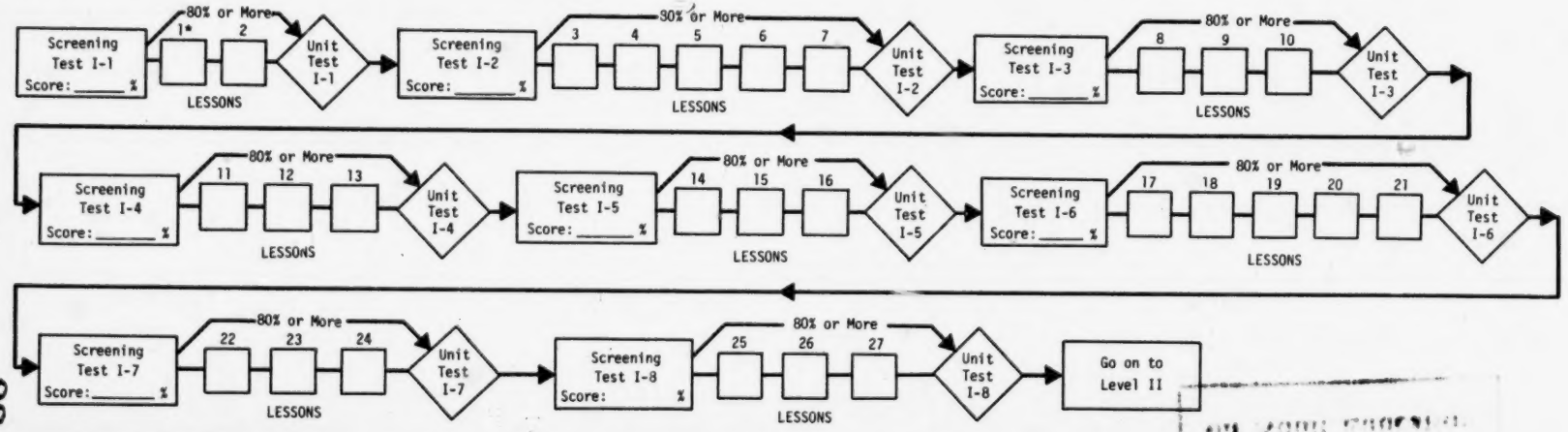
ADVANCED GENERAL EDUCATION PROGRAM

STUDENT PROGRESS/PERFORMANCE RECORD

NAME: _____ DATE STARTED: _____ DATE COMPLETED: _____

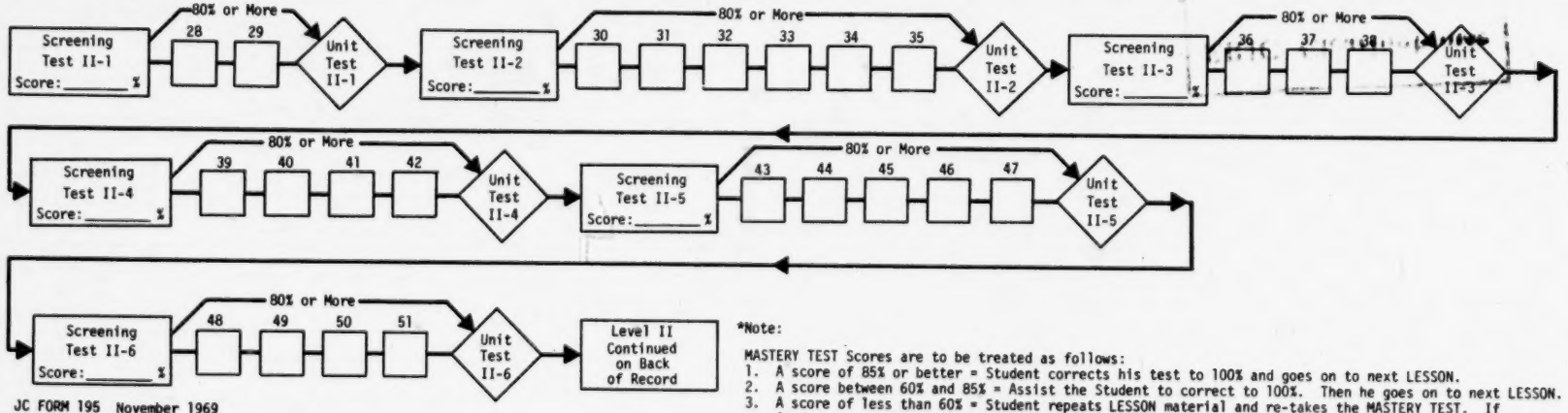
Stanford Achievement Test (Advanced Battery - Grades 7-9): READING _____ MATHEMATICS: _____

PROGRESS FLOW CHART LEVEL I



PROGRESS FLOW CHART LEVEL II

DATE STARTED: _____

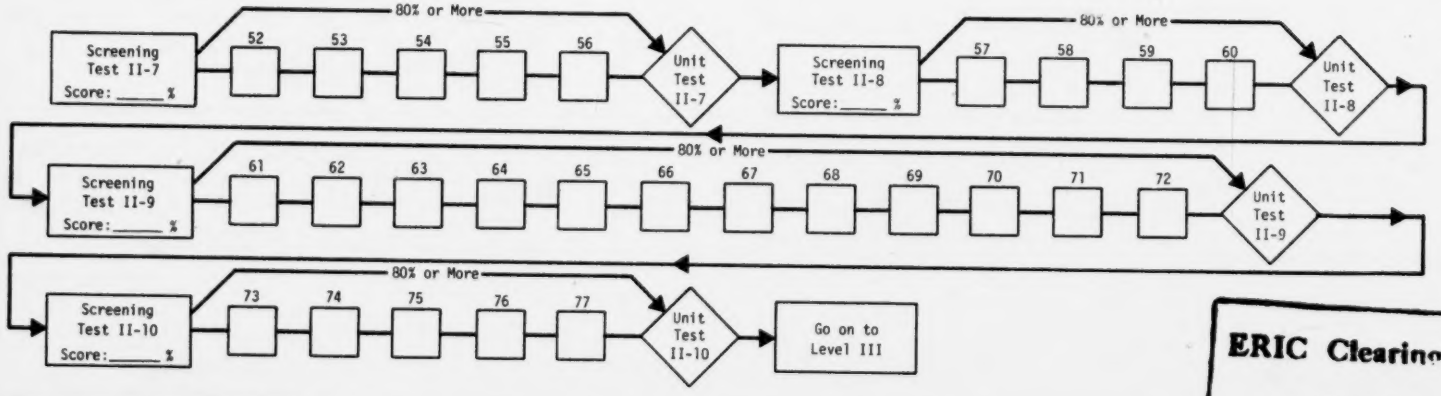

Screening Test II-1 Score: _____ %
80% or More
28 29
Unit Test II-1
Screening Test II-2 Score: _____ %
80% or More
30 31 32 33 34 35
Unit Test II-2
Screening Test II-3 Score: _____ %
80% or More
36 37 38
Unit Test II-3
Screening Test II-4 Score: _____ %
80% or More
39 40 41 42
Unit Test II-4
Screening Test II-5 Score: _____ %
80% or More
43 44 45 46 47
Unit Test II-5
Screening Test II-6 Score: _____ %
80% or More
48 49 50 51
Unit Test II-6
Level II Continued on Back of Record

*Note:

MASTERY TEST Scores are to be treated as follows:

1. A score of 85% or better = Student corrects his test to 100% and goes on to next LESSON.
2. A score between 60% and 85% = Assist the Student to correct to 100%. Then he goes on to next LESSON.
3. A score of less than 60% = Student repeats LESSON material and re-takes the MASTERY TEST. If Student scores less than 60% on the MASTERY TEST the second time, help him correct his test to 100%. He then goes on to the next LESSON.

PROGRESS FLOW CHART LEVEL II (CONTINUED)



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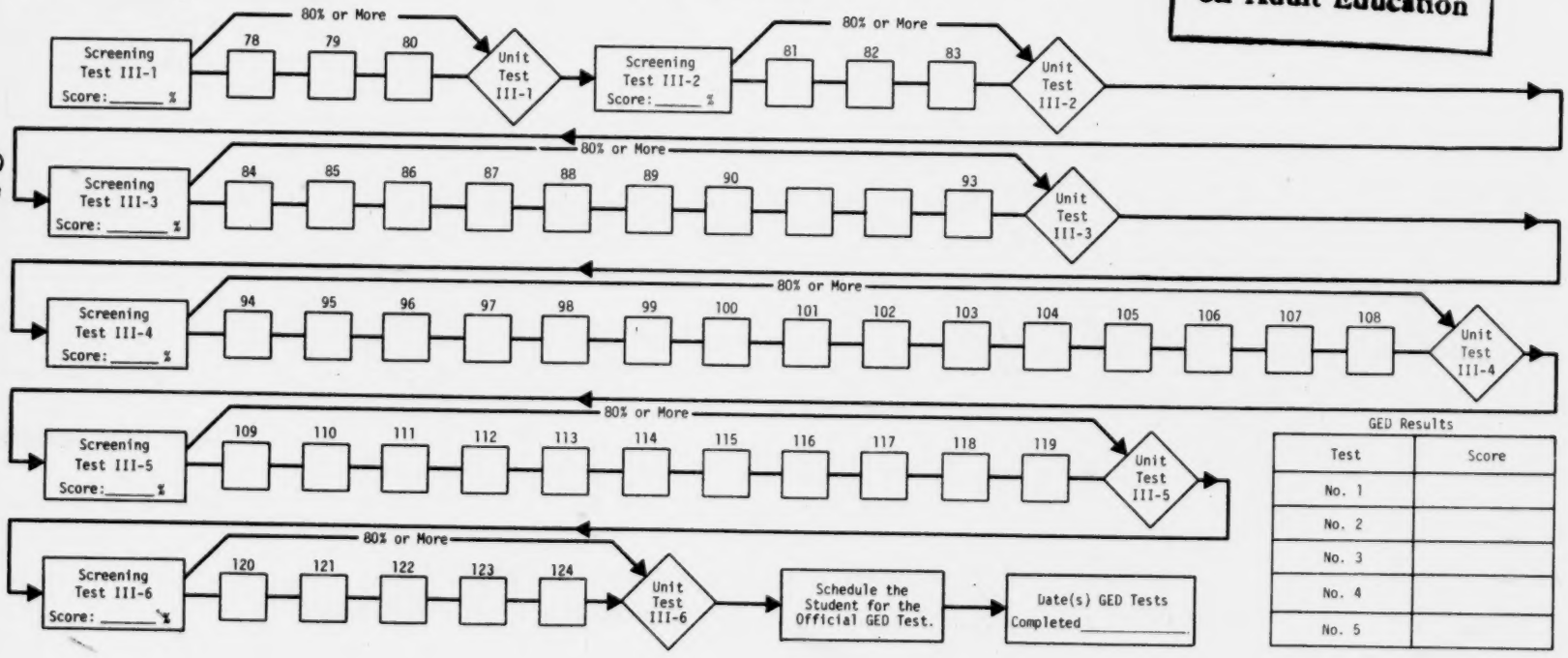
PROGRESS FLOW CHART LEVEL III

DATE STARTED: _____



GED Results

Test	Score
No. 1	
No. 2	
No. 3	
No. 4	
No. 5	

* U. S. GOVERNMENT PRINTING OFFICE : 1970 O - 389-859